



AP/CAH 135027
#9 11-26-98
Appeal/Brief

PATENT
ATTORNEY DOCKET NO. 02103/211001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Donald F. Hamilton et al. Art Unit: 2743
Serial No.: 08/777,958 Examiner: P. Lee
Filed : December 24, 1996
Title : VEHICLE TRUNK WOOFER

Honorable Assistant Commissioner for Patents
Washington, DC 20231

BRIEF FOR APPELLANT

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(1) REAL PARTY IN INTEREST.

The real party in interest is Bose Corporation.

(2) RELATED APPEALS AND INTERFERENCES. Appeal No. 94-

2403 in the parent application may have a bearing on the Board's decision in the pending appeal.

(3) STATUS OF CLAIMS.

Claims 1-10 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over Newcomb.

(4) STATUS OF AMENDMENTS. No amendment was filed

subsequent to final rejection.

(5) SUMMARY OF INVENTION. The invention comprises an

audio speaker system for a vehicle having a passenger compartment, a spare tire compartment, a trunk having a trunk floor, a dividing portion and a rear deck. The dividing portion, such as 11, (FIGS. 1 & 2) and rear deck, such as 3, divide the trunk, such as 7, and the passenger compartment of vehicle 1. The audio speaker system comprises at least one low frequency speaker, such as 9, disposed

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Chris Hammond
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within the trunk of the vehicle at the trunk rear in a location spaced from the passenger compartment by the portion of the trunk extending to the front of the vehicle such that the at least one speaker is clear of the rear deck, above the trunk floor and outside the spare tire compartment. The at least one speaker is preferably disposed in a rearward section of the trunk occupying negligible useful trunk volume to cause a smaller decrease in calculated trunk volume than would occur with the one speaker mounted in the rear deck, preferably being disposed in a rear trunk corner at the rear of the vehicle and mounted in an enclosure. The vehicle audio speaker system is preferably constructed and arranged to be free of an undesirable peak in the rear seat frequency response of the vehicle between 80-100 Hz and free of an undesirable hole between 60-80 Hz in the front seat frequency response of the vehicle. The rear deck, such as 3, is preferably free of speaker holes. Page 2, line 11-page 3, line 25.

(6) ISSUES.

Whether claims 1-10 meet the conditions for patentability when the Newcomb reference fails to suggest the desirability of modifying what is there disclosed to meet the terms of any of these claims.

(7) GROUPING OF CLAIMS.

The claims of the group do not stand or fall together.

(8) ARGUMENT.

I. CLAIMS 1-4 AND 9 MEET THE CONDITIONS FOR PATENTABILITY, AT LEAST BECAUSE THE REFERENCE, WHICH DISCLOSES WOOFERS INSIDE THE SPARE TIRE COMPARTMENT, FAILS TO SUGGEST THE DESIRABILITY OF LOCATING THE AT LEAST ONE LOW FREQUENCY SPEAKER DISPOSED WITHIN THE TRUNK OF THE VEHICLE AT THE TRUNK REAR IN A LOCATION SPACED FROM THE PASSENGER COMPARTMENT BY THE PORTION OF THE TRUNK EXTENDING TO THE FRONT OF THE VEHICLE SUCH THAT THE AT LEAST ONE SPEAKER IS CLEAR OF THE REAR DECK, ABOVE THE TRUNK FLOOR AND OUTSIDE THE SPARE TIRE COMPARTMENT, OF DISPOSED IN A REAR TRUNK CORNER AT THE REAR OF THE VEHICLE.

The final action states:

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newcomb.

Regarding claims 1-4, and 9, Newcomb discloses an audio speaker system for a vehicle in a magazine article. The woofer, mounted in an enclosure, is placed in the trunk, clear of the rear deck, as shown. However, Newcomb fails to explicitly show that the woofer is outside the spare tire compartment. It was well known in the art that the location of the woofer is generally not strictly limited to a specific location for a high fidelity stereo sound system because the low frequency sound signal produced by the woofer does not carry the spatial information as required for portraying the stereophonic sound image. Therefore the woofer can be placed almost any where around the listener within a reasonable distance. Newcomb shows the woofer inside the spare tire compartment. However, as discussed above, one would have expected that the woofer can be placed any where, including the rear trunk corner at the rear of the vehicle, inside the trunk because altering the location of the woofer inside the trunk does not produce any acoustically different sound effect. It would seem to be reasonable for one skill in the art to place the woofer outside the spare tire compartment, such as at the rear trunk corner, if one wants to keep the spare tire inside that compartment. It would also be a common sense to not place the woofer in the center of the trunk (for example, right above the spare tire compartment), so one can put luggage, shopping bags or other articles inside the trunk. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system as taught in Newcomb by placing the woofer inside the trunk clear of the rear deck, outside the spare tire compartment and at the rear trunk corner, since it has been held to be within the general skill of a worker in the art to rearrange the location of the woofer as a matter of design choice. In re Japikse, 86 USPQ 70.

"The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *In re Gordon*, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984). The reference must suggest the desirability of modifying what is there disclosed to meet the terms of the claim being rejected. Nothing in the reference suggests the desirability of modifying what is there disclosed to meet the terms of the claims being rejected.

The reference discloses:

The equipment in the trunk also does a disappearing act when panels are in place. For example, four a/d/s/ S10 10-inch subwoofers in the floor of the trunk can be covered. Using fiberglass, Rivera divided the spare-tire compartment into four separate sealed enclosures, each with 0.8 cubic feet of air space.

"The space I have in the trunk is really usable; I crossed the country with all my luggage and all my tools," said Rivera, who recently relocated to Southern California from Boston to look for work.

That teaching hardly suggests the desirability of having the audio speaker system comprise at least one low frequency speaker disposed within the trunk of the vehicle at the trunk rear in a location spaced from the passenger compartment by the portion of the trunk extending to the front of the vehicle such that the at least one speaker is clear of the rear deck above the trunk floor and outside the spare-tire compartment when an important aspect of what the reference discloses is to have the "equipment in the trunk . . . [do] a disappearing act when panels are in place" by having "four a/d/s/ S10 10-inch subwoofers in the floor of the trunk . .

.covered." Nor is there the slightest suggestion of having the at least one speaker disposed in a rearward section of the trunk occupying negligible useful trunk volume causing a smaller decrease in calculated trunk volume than would occur with the one speaker mounted in the rear deck as called for by claim 2 or having the at least one speaker disposed in a rear trunk corner at the rear of the vehicle as called for by claim 3.

What the Examiner is doing is using the disclosure in this application as a blueprint or template for proposing modifications to what the reference discloses in an attempt to meet the terms of the claims being rejected. This hindsight proposed reconstruction of the prior art reference cannot be used as a basis for rejecting claims.

Here, the Examiner relied upon hindsight to arrive at the determination of obviousness. It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious.¹⁵ This court has previously stated that "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention."¹⁶ *In re Fritch*, 23 U.S.P.Q. 2d 1780, 1784 (Fed. Cir. 1992).

¹⁵ *In re Gorman*, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). See also *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138, 227 USPQ 543, 547 (Fed. Cir. 1985).

¹⁶ *In re Fine*, 837 F.2d at 1075, 5 USPQ2d at 1600.

The Examiner cannot point to a single word, phrase, clause or sentence in the reference that remotely suggests the desirability of modifying what is there disclosed to meet the terms of the claims being rejected.

The reliance on *In re Japikse*, 86 U.S.P.Q. 70 (C.C.P.A. 1950) is inapposite. That case does not remotely support the statement that "it has been held to be within the general skill of a worker in the art to rearrange the location of the woofer as a matter of design choice." What the court actually said was, "We do not find in the reasons of appeal any allegation of error as to the holding so made, and, it may be said, we discern no reason for disagreeing with such holding." *Id.* 73. The court was there dealing with a contention of inoperativeness of the reference relied upon where operativeness was clear to those skilled in the art.

Furthermore, this 1950 case was decided before the Patent Act of 1952 authorizing rejections only if the differences between the reference and the invention are such that the subject matter as a whole, embracing not only structure, but also advantages achieved, would not have been obvious to a person of ordinary skill in the art at the time the invention was made from the prior art being relied upon, here the reference. That is the test under section 103, not whether it is "within the general skill of a worker in the art to rearrange the location of the woofer as a matter of design choice." Reference to "design choice" is a conclusion not a reason for rejection. In *In re Garrett*, 33 PTCJ 43 (BPA&I, September 30, 1986) the Board criticized the Examiner's statement that the proposed modification would have been "an obvious matter of engineering design choice" as a conclusion, not a reason, in reversing the section 103 rejection.

Instead of relying upon a 1950 decision before the Patent Act of 1952, the Examiner should follow the rule in *Gordon* announced by the Federal Circuit Court of Appeals that the reference must suggest the desirability of modifying what is there disclosed to meet the terms of claims being rejected on a single reference.

We take this occasion to explain what precedents are considered binding in proceedings in the Patent and Trademark Office (PTO). Where the Court of Appeals for the Federal Circuit has addressed a point of law in a published opinion, the Federal Circuit's decision is controlling. Similarly controlling are decisions considered to be binding precedent by the Federal Circuit, i.e., decisions of the former Court of Claims and the former Court of Customs and Patent Appeals, as well as the former Customs Court. See *South Corp. v. United States*, 690 F.2d 1368, 215 USPQ 657 (Fed. Cir. 1982) (in banc); *Bar Zell Expeditors, Inc. v. United States*, 698 F.2d 1210, 1211 n. 4 (Fed. Cir. 1983). In those relatively rare cases where the Federal Circuit has not addressed an issue, but there is "authorized published" Board precedent, that published Board precedent is binding on panels of the Board and Examiners in the Patent Examining Corps. *Ex parte Holt*, 19 U.S.P.Q. 2d 1211, 1214 (BPA&I 1991).

If this ground of rejection were repeated, the Examiner was respectfully requested to quote verbatim the language in the reference regarded as suggesting the desirability of modifying what is there disclosed to meet the terms of the claims being rejected. The Examiner did not and can not comply with this request.

II. THE REFERENCE FAILS TO RECOGNIZE THE PROBLEM OF THE UNDESIRABLE PEAK IN THE REAR SEAT FREQUENCY RESPONSE OF THE VEHICLE BETWEEN 80-100 HZ AND UNDESIRABLE HOLE BETWEEN 60 AND 80 HZ IN THE FRONT SEAT FREQUENCY RESPONSE, LET ALONE THE SOLUTION DEFINED BY THE STRUCTURE OF CLAIM 5.

The final action states, "Regarding claims 5 and 10, with the woofer mounted inside the trunk as taught in Newcomb, not conventionally mounted at the rear deck, the claimed frequency responses are inherently met." P.3.

The description expressly discloses features added by claims 5 and 10:

The frequency response of the configuration according to the invention is greatly superior to that obtained with the prior art. Using deck-mounted speakers, a "hole" in frequency response is normally experienced in the front seat between 60-80 Hertz. The graph of FIG. 3, which is a comparison between the front seat frequency response using deck-mounted speakers and the speaker arrangement of the invention, clearly shows that the hole between 60 and 80 Hertz is substantially eliminated. Similarly, using conventional deck-mounted speakers a peak in frequency response is usually encountered in the rear seat between 80 and 100 Hertz. Referring to FIG. 4, which is a comparison between rear seat frequency response of deck-mounted speakers and rear seat response using the configuration of the invention, the peak between 80 to 100 Hertz is substantially eliminated. Page 3, lines 11-25.

The reference discloses:

The fishtank is situated between the Toyota's rear seat and trunk. It has two plexiglas covers with holes in different areas.

"The cover is designed so the water won't leak out," Rivera explained. "The water will splash into one area, but then it will just go back into the fish tank." The tank also has two 120-volt pumps that run off an AC-to-DC converter.

"To be honest with you," Rivera said, "if I take the fish tank out, the bass response is a little different. The trunk is working as a second enclosure, even though my four speakers in the back have their own separate enclosures. If I take the fish tank out, then I have this big opening and everything just gets lost. So I figure it's part of the enclosure." P. 29-30.

"A reference is only good for what it clearly and definitely discloses." *In re Hughes*, 145 U.S.P.Q. 467, 471 (C.C.P.A. 1965); *In re Moreton*, 129 U.S.P.Q. 227, 230 (C.C.P.A. 1961).

Manifestly, nothing in the reference remotely discloses that the vehicle loudspeaker system is characterized by a front seat frequency response and a rear seat frequency response constructed and arranged to be free of an undesirable peak in the rear seat frequency response of the vehicle between 80-100 Hz and free of an undesirable hole between 60-80 Hz in the front seat frequency response while having a good bass frequency response.

III. THE REFERENCE DOES NOT DISCLOSE THE ABSENCE OF HOLES IN THE REAR DECK OR THE DESIRABILITY OF THE FEATURE CALLED FOR BY CLAIMS 6-10.

The Final Action states:

Regarding claim 6, Newcomb shows that the rear deck is free of speaker holes. Regarding claims 7 and 8, as discussed above and repeated here, it would have been obvious for the designer to mount the woofer any where inside the trunk, including at a rear trunk corner at the rear of the vehicle altering the location of the woofer inside the trunk does not produce any acoustically different sound effect altering the location of the woofer inside the trunk does not produce any acoustically different sound effect. The limitation that mounting woofer in a rearward section of the trunk occupying negligible useful trunk volume to cause a smaller decrease in calculated trunk volume than would occur with the woofer mounted in the rear deck is inherently met.

The reference does not disclose a rear deck, let alone absence of holes in the non-existent rear deck.

The reference discloses:

"For the Finals, I thought, people like the fish tank so much let me make a bigger one," he added. So he was off to Future Plastics once again to ask Poznauskis to build a bigger tank. And this time he wanted it ported so bass from four 10-inch subwoofers in the trunk could enter the interior of the car through the fish tank. P. 29.

A ported "fish tank" situated between the Toyota's rear seat and trunk with "two plexiglass covers with holes in different areas," *ibid.*, hardly discloses a rear deck free of speaker holes.

The description explains the benefits of this claimed feature of claims 6-10:

The speaker configuration of the invention has numerous advantages over the prior art. Since the invention does not require holes to be cut in the rear deck, transmission of road noise into the passenger compartment is reduced. The package shelf does not, however, affect low frequencies (+/- 1dB), and the trunk as a whole acts as a natural low-pass filter. Also, because of the way auto manufacturers calculate useful trunk volume, the enclosure in the corner of the trunk results in a smaller decrease in calculated useful trunk volume than do speakers mounted in the rear deck. P. 2 lines 21-31.

IV. THE AUTHORITIES UPON WHICH THE EXAMINER RELIES ARE CONSISTENT WITH THE REQUIREMENT THAT A REJECTION UNDER SECTION 103 ON A SINGLE REFERENCE IS IMPROPER WHEN THE REFERENCE FAILS TO SUGGEST THE DESIRABILITY OF MODIFYING WHAT IS THERE DISCLOSED TO MEET THE TERMS OF CLAIMS BEING REJECTED.

The final action states:

3.1 Applicant argued that the examiner's conclusion of obviousness is based upon improper hindsight reasoning.

It must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

3.2 Applicant argued that there is not suggestion to modify the references.

The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the reference itself or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, as discussed in the previous office action, the motivation for not storing the woofer inside the spare tire compartment in Newcomb is to keep the spare tire inside that compartment of emergency situation, especially on a long trip. Furthermore, the reason behind storing the woofer at the rear trunk corner is that it was a common sense to not place the woofer in the center of the trunk (for example, right above the spare tire compartment), so one can put luggage, shopping bags or other

articles inside the trunk. The key for being able to relocating the woofer to any where inside the trunk is that the low frequency sound signal produced by a woofer does not carry the spatial information as required for portraying the stereophonic sound image. Therefore, the designer has a great flexibility for determining the optimize location for storing the woofer while providing sufficient storage space inside the trunk. Since the woofer can be located almost anywhere inside the trunk, the designer can go through trial test to determine at what location that the woofer can be placed in the trunk while there is a sufficient amount of storage space left. Therefore, modifying Newcomb would have been obvious to one of ordinary skill in the art as previously set forth in the last office action. Pp. 4-5.

Reliance on *In re McLaughlin*, 170 U.S.P.Q. 209 (C.C.P.A. 1970) is also inapposite because the references there did not suggest the desirability of combining what is there disclosed to meet the terms of rejected claim 15, and the court reversed the final rejection of claim 15, but the references did suggest the desirability of combining what was there disclosed to meet the terms of rejected claims 13 and 14. There the court said:

The Cook patent does indicate that the car shown therein is suitable for carrying palletized loads with lift trucks being used for the loading and unloading, including stacking of the pallets. Since the secondary references show that it was well known to use side filler panels and bulkheads to confine palletized loads to prevent lateral and longitudinal shifting, we agree that those references would have suggested use of such panels and bulkheads with the Cook car for the same purpose.

The reliance on *In re Fine*, 5 U.S.P.Q. 2d 96 (Fed Cir. 1988) and *In re Jones*, 21 U.S.P.Q. 2d 1941 (Fed. Cir. 1992) is also inapposite. In both cases, the Federal Circuit Court of Appeals reversed final rejections based on a combination of references failing to suggest the desirability of combining what was there disclosed to meet the terms of claims finally rejected and affirmed by the Board of Patent Appeals and Interferences.

In Fine the court said "The Board points to nothing in the cited references, either alone or in combination, suggesting or teaching Fine's invention." *Id.* 1599.

The court also said, "One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *Id.* 1600.

In *Jones* the court said, "Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill in the herbicidal art would have been motivated to make the modifications of the prior art salts necessary to arrive at the claimed II-(II'-aminoethoxy ethianol) salt." 21 U.S.P.Q. 2d at 1944.

CONCLUSION

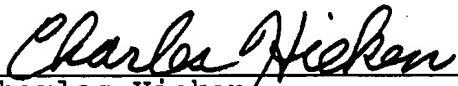
In view of the foregoing reasoning and authorities and the inability of the reference to suggest the desirability of modifying what is there disclosed to meet the terms of the rejected claims, the decision of the Examiner finally rejecting claims 1-10 should be reversed. Should the Board be of the opinion that one or more of the rejected claims may be allowed in amended form, the Board is respectfully requested to include an explicit statement that a claim may be allowed in such amended form and direct that appellants shall have the right to amended in conformity with such statement which shall be binding on the Examiner in the absence of new references or grounds of rejection.

The brief fee of \$310 is enclosed. Should the brief fee have been inadvertently omitted or be inadequate or excessive, the office is respectfully requested to charge any deficiency or credit

any overpayment to Deposit Account No. 06-1050, Order No.
02103/211001 of the undersigned attorney.

Respectfully submitted,

FISH & RICHARDSON, P.C.



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Attorneys for Application Owner

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Enclosures

APPENDIX. REJECTED CLAIMS

1. An audio speaker system for a vehicle having a passenger compartment, a spare tire compartment, a trunk having a trunk floor, a dividing portion and a rear deck, said passenger compartment, said audio speaker system comprising at least one low frequency speaker disposed within the trunk of the vehicle at the trunk rear in a location spaced from the passenger compartment by the portion of the trunk extending to the front of said vehicle such that said at least one speaker is clear of the rear deck above said trunk floor and outside said spare tire compartment.

2. An audio speaker system in accordance with claim 1, wherein said at least one speaker is disposed in a rearward section of the trunk occupying negligible useful trunk volume to cause a smaller decrease in calculated trunk volume than would occur with said one speaker mounted in said rear deck.

3. An audio speaker system in accordance with claim 2, wherein said at least one speaker is disposed in a rear trunk corner at the rear of said vehicle.

4. An audio speaker system in accordance with claim 1, wherein said at least one speaker is mounted in an enclosure.

5. An audio speaker system in accordance with claim 1, wherein said vehicle is characterized by a front seat frequency response and a rear seat frequency response constructed and arranged to be free of an undesirable peak in the rear seat frequency response of said vehicle between 80-100 Hz and free of an undesirable hole between 60-80 Hz in the front seat frequency response of said vehicle.

6. An audio speaker system for a vehicle in accordance with claim 1 wherein said rear deck is free of speaker holes.

7. An audio speaker system in accordance with claim 6, wherein said at least one speaker is disposed in a rearward section of the trunk occupying negligible useful trunk volume to cause a smaller decrease in calculated trunk volume than would occur with said one speaker mounted in said rear deck.

8. An audio speaker system in accordance with claim 7, wherein said at least one speaker is disposed in a rear trunk corner at the rear of said vehicle.

9. An audio speaker system in accordance with claim 7, wherein said at least one speaker is mounted in an enclosure.

10. An audio speaker system in accordance with claim 7, wherein said vehicle is characterized by a front seat frequency response and a rear seat frequency response ~~constructed~~ and arranged to be free of an undesirable peak in the rear seat frequency response of said vehicle between 80-100 Hz and free of an undesirable hole between 60-80 Hz in the front seat frequency response of said vehicle.

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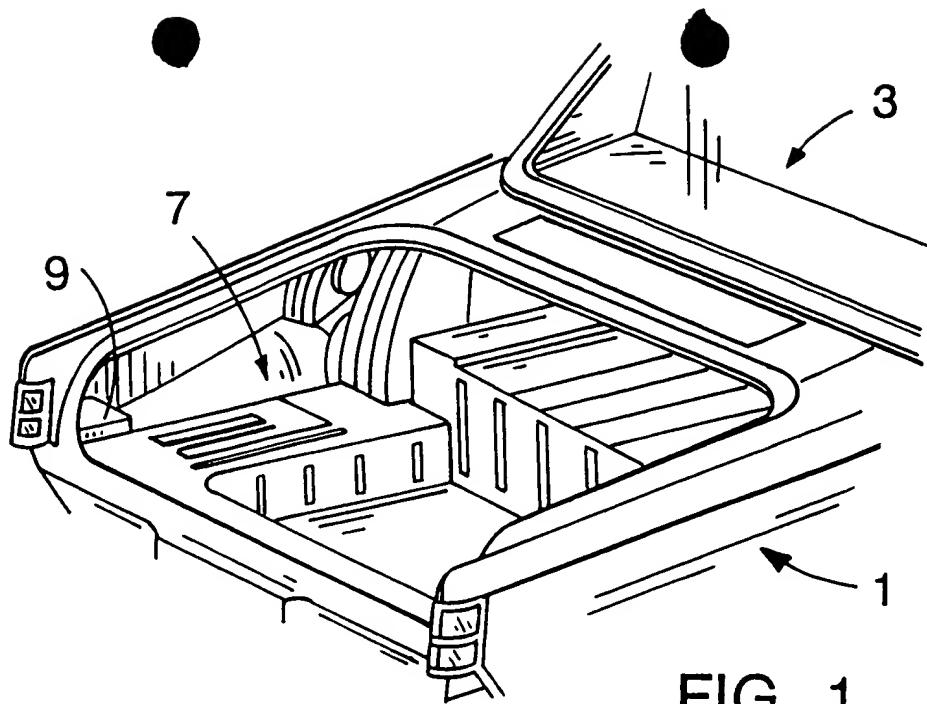


FIG. 1

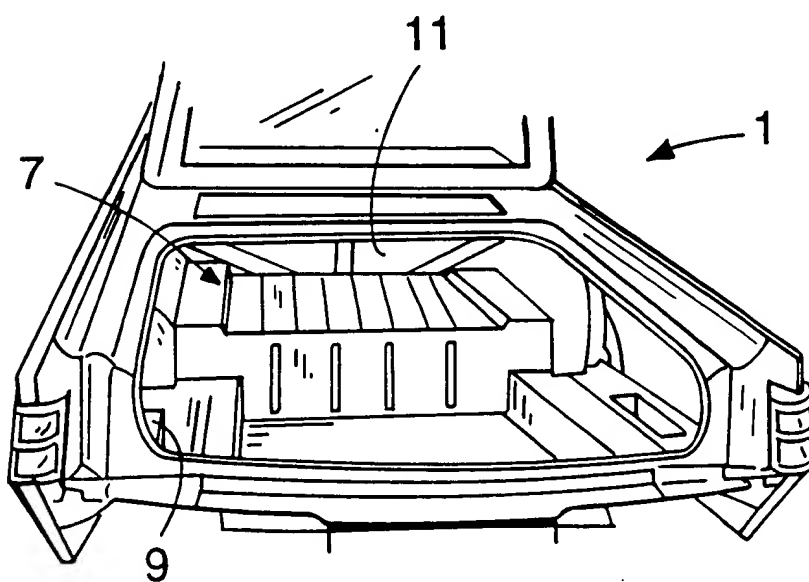


FIG. 2

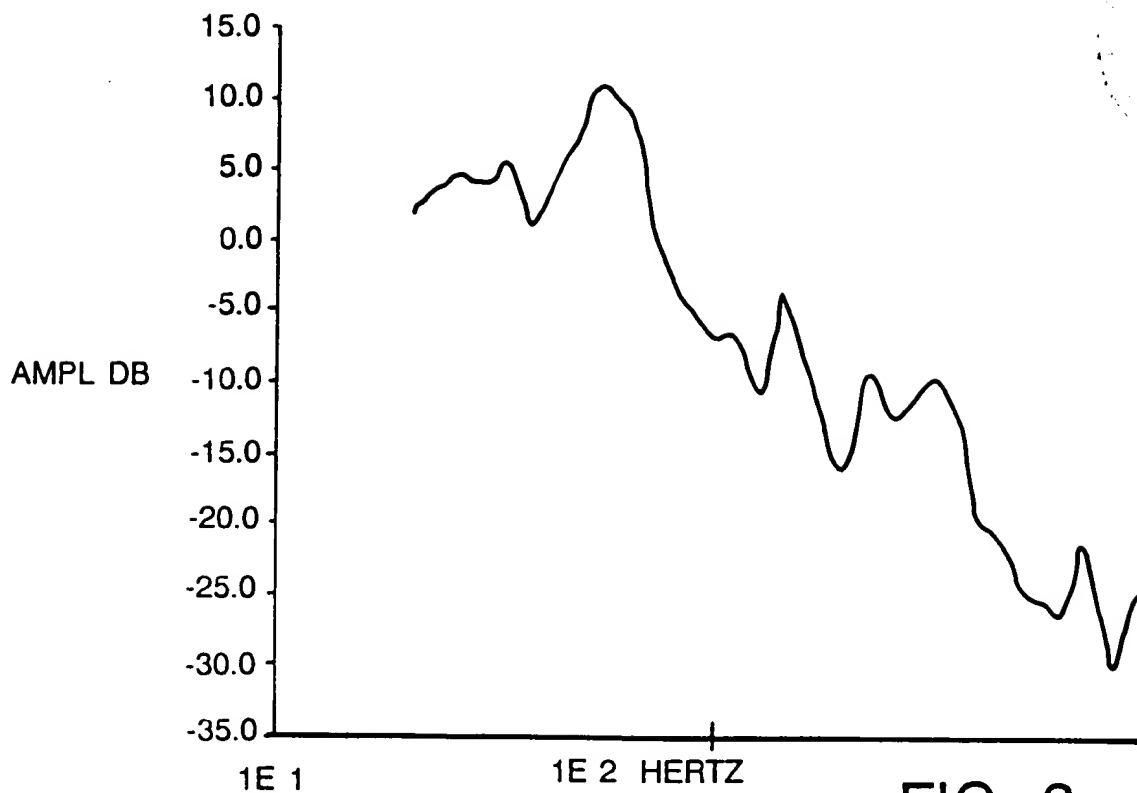


FIG. 3

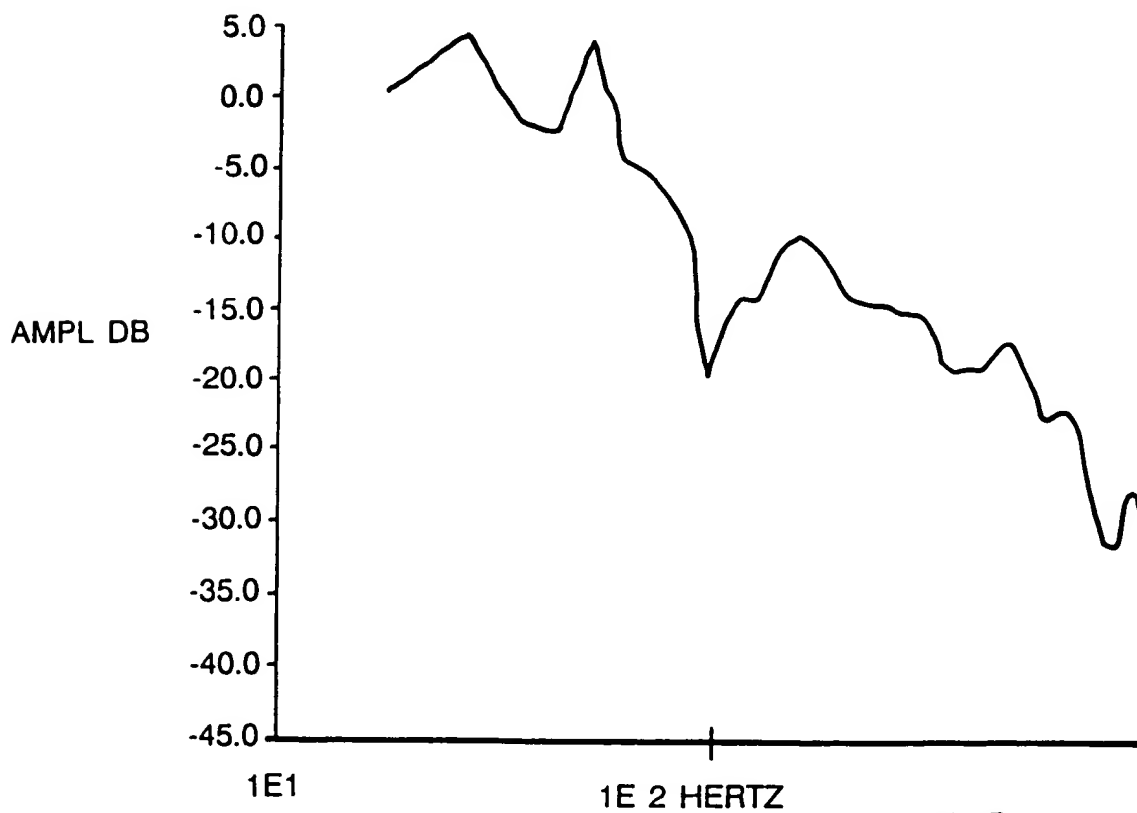


FIG. 4

NEGLEGIBLE SPACE

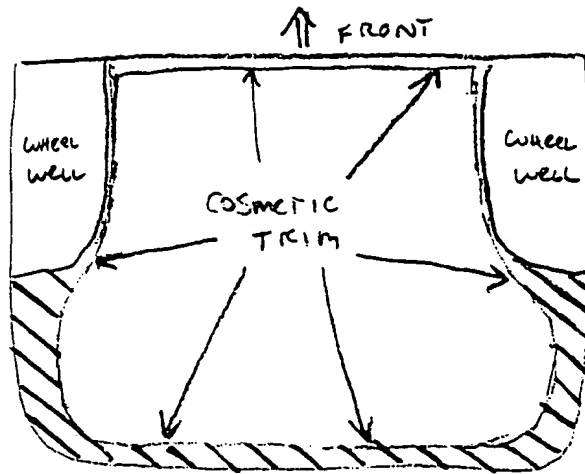


FIG. 5

TOP VIEW OF TRUNK

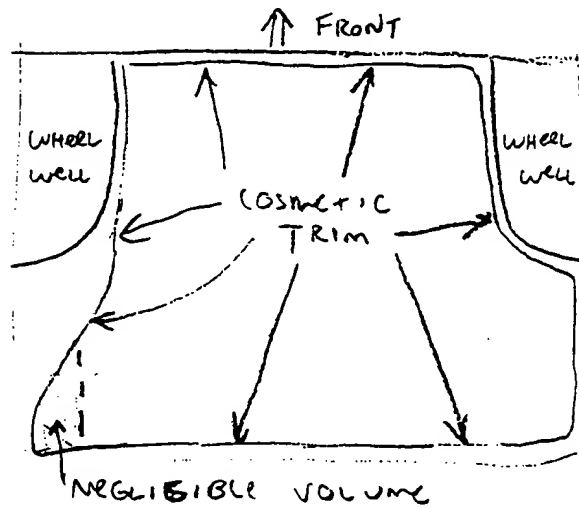
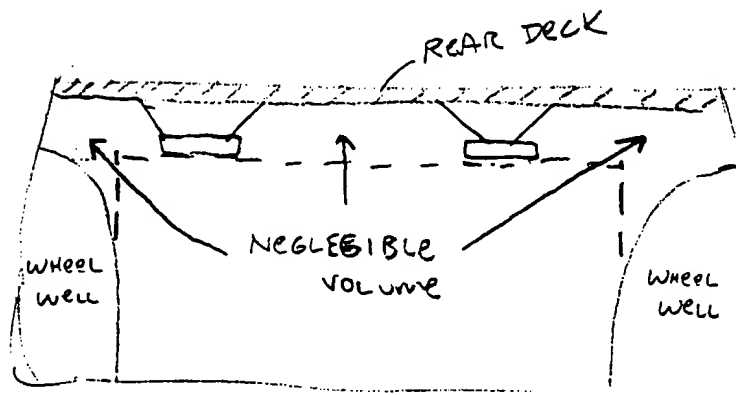


FIG. 6

TOP VIEW OF TRUNK



REAR
SIDE VIEW OF TRUNK

FIG. 7